



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/581,972	12/26/2006	Takayuki Sakakibara	292089USOX PCT	7265
22850	7590	01/04/2010		
OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, L.L.P. 1940 DUKE STREET ALEXANDRIA, VA 22314				
EXAMINER WALTERS JR, ROBERT S				
ART UNIT 1792		PAPER NUMBER		
NOTIFICATION DATE 01/04/2010		DELIVERY MODE ELECTRONIC		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentdocket@oblon.com
oblonpat@oblon.com
jgardner@oblon.com

Office Action Summary

Application No.

10/581,972

Applicant(s)

SAKAKIBARA ET AL.

Examiner

ROBERT S. WALTERS JR

Art Unit

1792

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 September 2009.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9, 12, 14 and 15 is/are pending in the application.
4a) Of the above claim(s) 1-4 is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 5-9, 12, 14 and 15 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/06)
Paper No(s)/Mail Date 7/9/2009, 11/6/2007
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____

DETAILED ACTION

Status of Application

Claims 1-9, 12, 14 and 15 are pending. Claims 1-4 are withdrawn. Claims 5-9, 12, 14 and 15 are presented for examination.

Response to Arguments

Applicant's arguments filed 9/17/2009 have been fully considered but they are not persuasive. The applicant first argues that the combination of references fails to disclose utilizing greater than 75% by weight of zinc. However, Grubb clearly teaches that preferably at least 200 phr of zinc is utilized (0014), and the examples utilize 250 phr (71% by weight of zinc). Furthermore, Grubb suggests that increased zinc loading is beneficial, note that 75 phr is the minimum and at least 150 is more preferred, and that at least 200 phr is even more preferred (0014). Therefore, clearly the amount of zinc present in the coating is a result-effective variable, whereby increasing the zinc loading increases corrosion protection and toughening of the epoxy (0014). Thus, the examiner maintains it would have been obvious to modify Grubb's process by increasing the zinc loading to greater than 75 weight % as is claimed through routine optimization.

Second, the applicant argues that Grubb does not suggest the claimed thickness of the undercoat or topcoat. However, Grubb does teach the undercoat having a thickness of from 38.1-76.2 microns (0029). Note, that this overlaps with applicant's claimed range of greater than 50 or 60 microns for the undercoat layer. Furthermore, it has been held that overlapping ranges

are *prima facie* evidence of obviousness, in the absence of a showing of criticality of the claimed range. Furthermore, Grubb teaches the topcoat having a thickness of 254-381 microns (0016). Note, that this overlaps with applicant's claimed range of from 200 to 1200 microns in the independent claim. As noted above, it has been held that overlapping ranges are *prima facie* evidence of obviousness, in the absence of a showing of criticality of the claimed range.

Third, with regards to the newly added claim 15 of a topcoat thickness from 400 to 1200 microns, it is true that Grubb fails to disclose this particular range. However, Grubb teaches a range up to about 381 microns (0016). The end of this range is close to the minimum thickness of the claimed range. In this case, the ranges are very close to one another, and one of ordinary skill in the art at the time of the invention would have expected the resultant products of the method to have the same properties regardless of which range was selected. Therefore, the examiner maintains that the claimed range is *prima facie* obvious over the range disclosed by Grubb, as the courts have held that a *prima facie* case of obviousness exists where the claimed ranges and prior art ranges do not overlap but are close enough that one skilled in the art would have expected them to have the same properties. *Titanium Metals Corp. of America v. Bonner*, 778 F.2d 775, 227 USPQ 773 (Fed. Cir. 1985).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

1. Claims 5, 8, 9, 12, 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Grubb et al. (U.S. PGPUB No. 2002/0090823) in view of Guyomard (U.S. Pat. No. 4316939) and Dutheil et al. (U.S. Pat. No. 5891515).

I. Regarding claims 5, 8, 9, 12 and 14, Grubb teaches a method of coating a spring (0001) which comprises:

(a) a pretreating step of forming a phosphate film on the surface of the spring (0021)

- (b) applying an undercoat of epoxy resin powder containing preferably at least about 200 phr of zinc (0014) to a thickness of from 38.1 to 76.2 microns (0029, note that overlapping ranges are *prima facie* evidence of obviousness);
- (c) applying a topcoat of an epoxy resin powder (0018) to a thickness of from 254 microns to 381 microns (0016, note that overlapping ranges are *prima facie* evidence of obviousness); and
- (d) a baking step (0018).

Grubb further teaches that both epoxy resin powders can comprise a bisphenol A type epoxy resin (0022-0023), and may comprise pigments (0038). Grubb fails to teach that the epoxy resin powder comprises at least 75 weight % of zinc, or the use of a epoxy polyester resin powder for the topcoat. Grubb further fails to teach the inclusion of a block isocyanate in the epoxy resin powder in the claimed range.

First, with regards to the weight % of zinc, it would have been obvious to one of ordinary skill in the art at the time of the invention that the percentage of zinc would affect both the coating quality as well as the ability of the coating to resist corrosion and toughen the epoxy resin (see Grubb at 0014). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to choose the instantly claimed range through process optimization, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. See *In re Boesch*, 205 USPQ 215 (CCPA 1980).

Second, Guyomard teaches the use of an epoxy polyester resin powder to be applied to a metallic object having a first anti-corrosive coating of zinc (see Guyomard at claims 1-7).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Grubb's method by utilizing an epoxy polyester resin powder as the topcoat, as is disclosed by Guyomard. One would have been motivated to make this modification as Guyomard teaches that the addition of a polyester resin provides better results in terms of resistance to the elements as compared to simply an epoxy resin powder (column 3, line 38-column 4, line 15).

Third, Dutheil teaches coating a metallic part with an epoxy resin powder (abstract and column 2, lines 41-47). Dutheil further teaches inclusion of a hardener in the epoxy resin, such as a blocked isocyanate (column 2, lines 57-59 and column 3, lines 1-6). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Grubb in view of Guyomard's method by inclusion of a blocked isocyanate into the epoxy resin powder, as taught by Dutheil. One would have been motivated to make this modification as one of ordinary skill in the art at the time of the invention could have added the blocked isocyanate as a conventional hardener into Grubb in view of Guyomard's method with a reasonable expectation of success (as it would be expected to harden similarly in both methods), and the predictable result of providing an epoxy resin powder for application to a spring.

Finally, Grubb in view of Guyomard and Dutheil still fail to teach the specific range of block isocyanate that is present. However, it would have been obvious to one of ordinary skill in the art at the time of the invention that the amount of hardener will affect the coating quality (see Dutheil at column 3, lines 12-15). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to choose the instantly claimed range through process optimization, since it has been held that where the general conditions of a claim are disclosed in

the prior art, discovering the optimum or workable ranges involves only routine skill in the art. See *In re Boesch*, 205 USPQ 215 (CCPA 1980).

II. Regarding claim 15, Grubb in view of Guyomard and Dutheil teach all the limitations of claim 5, but fail to teach the thickness of the topcoat from 400 to 1200 microns. However, Grubb in view of Guyomard and Dutheil teach a range up to about 381 microns (see Grubb at 0016). The end of this range is close to the minimum thickness of the claimed range. In this case, the ranges are very close to one another, and one of ordinary skill in the art at the time of the invention would have expected the resultant products of the method to have the same properties regardless of which range was selected. Therefore, the examiner maintains that the claimed range is *prima facie* obvious over the range disclosed by Grubb in view of Guyomard and Dutheil, as the courts have held that a *prima facie* case of obviousness exists where the claimed ranges and prior art ranges do not overlap but are close enough that one skilled in the art would have expected them to have the same properties. *Titanium Metals Corp. of America v. Bonner*, 778 F.2d 775, 227 USPQ 773 (Fed. Cir. 1985).

2. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Grubb in view of Guyomard and Dutheil as applied to claim 5 above, and further in view of Springer et al. (U.S. Pat. No. 6537610).

Regarding claim 6, Grubb in view of Guyomard and Dutheil teach all the limitations of claim 5, but fail to teach using an intermediate heating step to form a film in a half-cured state.

However, Springer teaches a process for applying a dual-layer coating to an automobile suspension part (abstract), such as a spring (column 7, line 44) comprising applying a zinc-rich epoxy powder (column 7, lines 51-58), followed by an intermediate heating step to half-cure the epoxy resin powder (column 7, line 65-column 8, line 4) at a temperature of approximately 149-177 °C, followed by coating a thermoplastic powder (column 8, lines 24-29), and a final baking step conducted at a temperature of approximately 149-166 °C (column 9, lines 63-67).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Grubb in view of Guyomard and Dutheil's method by incorporating an intermediate heating step as is disclosed by Springer. One would have been motivated to make this modification as Springer teaches that this approach overcomes problems of using a typical electrostatic application of the topcoat, and allows for a high-volume process while overcoming these problems (column 2, lines 13-17).

3. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Grubb in view of Guyomard and Dutheil as applied to claim 5 above, and further in view of Springer and ("Powder Coatings Made Easy").

Regarding claim 7, Grubb in view of Guyomard and Dutheil teach all the limitations of claim 5 (see above), but fail to teach the specifics of the preheating step, intermediate heating step and final heating step. However, Springer teaches the specifics of the intermediate and final baking step (see rejection above). One would have been motivated to modify Grubb in view of Guyomard and Dutheil's method with Springer's heating steps for the reasons previously

outlined. Furthermore, "Powder Coatings Made Easy" teaches utilizing a preheating step in powder coating at a temperature of 88 °C (Preheating Section, page 36). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Grubb in view of Guyomard and Dutheil's method by including a preheating step prior to applying the undercoating, as is discussed in "Powder Coatings Made Easy". One would have been motivated to make this modification as "Powder Coatings Made Easy" teaches that this allows for removing any ambient moisture on the part to be coated, and also helps to adhere the powder to the part to be coated (Preheating Section, page 36).

Conclusion

Claims 1-9, 12, 14 and 15 are pending.

Claims 1-4 are withdrawn.

Claims 5-9, 12, 14 and 15 are rejected.

No claim is allowed.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ROBERT S. WALTERS JR whose telephone number is (571)270-5351. The examiner can normally be reached on Monday-Friday, 8:00am to 5:00pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Barr can be reached on (571)272-1414. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Michael Barr/
Supervisory Patent Examiner, Art Unit
1792

/ROBERT S. WALTERS JR/
December 29, 2009
Examiner, Art Unit 1792